**UNIVERSITY**

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(Karunya Institute of Technology & Sciences)

(Declared as Deemed-to-be University under Sec.3 of the UGC Act, 1956)

Reg.No. \_\_\_\_\_\_\_\_\_\_\_\_\_

**End Semester Examination – Nov/Dec – 2016**

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|  |  | **Semester :** | **2016-17 ODD** |
| **Code :** | **10NT308** | **Duration :** | **3hrs** |
| **Sub. Name :** | **Applications of Nanotechnology** | **Max. marks :** | **100** |

**ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)**

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| **Q. No.** | **Sub Div.** | **Questions** | **Marks** |
| 1. | Discuss in detail about DNA decoders and microarrays. | | 20 |
| (OR) | | | |
| 2. | a. | Schematically explain the steps involved inhow the nanoparticles conjugates with antibody. | 10 |
| b. | Discuss about the various steps involved in replication of DNA with a neat diagram. | 8 |
| c. | Structure of protein. | 2 |
| 3. | a. | Explain with a neat diagram how the data is stored and retrieved from optical storage disks. | 10 |
|  | b. | Write a note on data storage formats. | 5 |
|  | c. | What are the different performance parameters involved in optical storage disk. | 5 |
| (OR) | | | |
| 4. | a. | Briefly discuss on focusing error signal and Tracking error signal of optical pick up head with a neat diagram.. | 15 |
|  | b. | Highlight the role of nanotechnology in optical data storage. | 5 |
| 5. | a. | Explain in detail the working principle of dye sensitized solar cells with a neat diagram. | 10 |
|  | b. | What are the different types of fuel cells?Explain any 2 of them in detail. | 10 |
| (OR) | | | |
| 6. | a. | Write the significance of hybrid-nano polymer solar cell. | 10 |
|  | b. | Justify how quantum dots increases the efficiency of solar cells. | 10 |
| 7. | a. | What is Nanosuspension. | 2 |
|  | b. | Write in detail any 4 preparation methods of Nanosuspension in pharmaceuticals. | 18 |
| (OR) | | | |
| 8. | a. | How are Nanogels synthesized using different techniques | 10 |
|  | b. | Discuss few applications of Nanogels | 10 |
| **Compulsory:** | | |  |
| 9. | Derive the expression for 3D,2D,1D and 0D nanomaterials | | 20 |

ALL THE BEST